

REMARKS

This paper is responsive to a Non-Final Office action dated January 26, 2006. Claims 1-30 were examined.

Preliminary Matter

The Advisory Action of March 28, 2005 indicated that the subject matter of claim 7 was allowable. Claim 7 was amended in an amendment after final mailed on October 28, 2005 with the Appeal Brief. Claim 7 was amended to incorporate the limitations of claim 1 in accordance with the Advisory Action. However, the amendment was overlooked by the examiner. Applicant respectfully requests indication that the amendment has been entered and that claim 7 is allowed.

Interview Summary

Applicant appreciates the time taken by Mr. Li B. Zhen for the examiner interview conducted on April 19, 2006. The participants included Li B. Zhen, David W. O'Brien, and Steven R. Gilliam. The participants discussed the outstanding rejections. The Office stated that disposal of the current §112 rejections, would also dispose of the §103 rejections from the Final Office Action of January 5, 2005 preceding the Appeal Brief of October 28, 2005. The participants agreed that amendment of claim 28 to excise recitation of "and a network, wireline, wireless, or other communications medium" would resolve the new §101 rejection. The participants also agreed that the rationale for at the §112 written description rejections was based on a misunderstanding that DCAS is a single target synchronization primitive, which it is not. The participants also agreed that identification of a reference that disclosed use of an LL/SC for a CAS operation would address the §112 enablement rejections. The examiner also explained that the amendment to claim 7 had been overlooked.

Claim Rejections – 35 U.S.C. §112

Claims 1-30 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is based on a misunderstanding by the Office of Applicant's specification. Applicant describes a *remove* operation and a *removeGE* operation.

Applicant describes multiple possible implementations of the *removeGE* operation. See page 32, lines 5 – 23. One of those possible implementations employs a DCAS instead of a CAS operation. A DCAS is not a single target synchronization primitive. As admitted by the examiner in the examiner interview, the Office failed to recognize the other *remove* operation and the other possible implementations for the *removeGE* operation. The §112 rejections are based upon the Office overlooking the *remove* operation described in Applicant's specification and the misunderstanding that Applicant's specification only described a single implementation that used a DCAS instead of a CAS for the *removeGE* operation. Applicant respectfully submits that the §112 written description rejections should be withdrawn.

Claims 1-30 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Office has requested identification of a reference that discloses using an LL/SC pair instead of a CAS to address these §112 rejections. Applicant first points out that the Office relied on the statement in Jayanti that "no existing multiprocessor system supports LL/SC." However, the Office failed to appreciate the remainder of the statement "with strong semantics," because Jayanti then goes on to identify various implementations of LL/SC supported in Alpha, POWER4, and MIPS processors. See page 285, second column, lines 7 – 12; page 286, first column, lines 9 – 11; Figure 1; page 286, second column, second and third full paragraphs. To comply with the Office's request, Applicant identifies the following references:

- MOIR, Mark, "Practical implementation of non-blocking synchronization primitives," In *Proceedings of the Sixteenth Annual ACM Symposium on Principles of Distributed Computing*, Santa Barbara, CA, United States, August 21-24, 1997, pp. 219-228, ACM Press, New York, ,
- JAYANTI, Prasad, "A Complete and Constant Time Wait-Free Implementation of CAS from LL/SC and Vice Versa," *Distributed Computing: Proceedings of the 12th International Symposium*, DISC'98, Andros, Greece, Lecture Notes in Computer Science, September 1998, pp. 216-230, vol.1499/1998, Springer Berlin/Heidelberg (submitted in).

The Moir reference was submitted in the Information Disclosure Statement of February 6, 2006. The second Jayanti reference is being submitted in an Information Disclosure

Statement that accompanies this response. The second Jayanti reference was identified from the Jayanti reference identified by the Examiner in the PTO-892 that accompanied the Non-Final Office Action of January 26, 2006.

Claim Rejections – 35 U.S.C. §101

Claim 28 is rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Applicant believes that the current examination guidelines used by the Office to reject claims that recite communications medium, including wireline, wireless, etc., do not comport with case law or statutes. However, Applicant has amended the claim in order to advance prosecution.

Claim Rejections – 35 U.S.C. §103

Claims 1-8, 10-22 and 25-30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Massalin, “A Lock-Free Multiprocessor OS Kernel” (hereinafter, “Massalin”) in view of U.S. Patent No. 6,651,146 to Srinivas et al. (hereinafter, “Srinivas”). Claims 9, 23 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Massalin and Srinivas in view of U.S. Patent No. 6,581,063 to Kirkman (hereinafter, “Kirkman”).

Applicant respectfully requests reconsideration of the §103 rejections for the reasons explained in the Appeal Brief mailed on October 28, 2005. As stated above, Applicant understands from the examiner interview that the §103 rejections will not persist since the §112 rejection have been addressed.

In summary, claims 1-30 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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Respectfully submitted,



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